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A REVISION OF HISTORY.

As no criticism has been made on the proposals set out a year ago, to free the Egyptian records from the assumption of a single kalendar having been in use, and to recognize that at least two kalendars were common, it seems time now to enter on a general revision of all the historical material which we possess. This is the more urgent as Egypt is the measuring line for all other early history, in Palestine, Anatolia, and Greece; to have a settled scale for it is therefore essential.

In the article on "The Age of Egypt" (*Ancient Egypt* 1929, p. 33) the four different kinds of kalendar named on the monuments were set out, and the true nature of them discussed. It is not needful therefore to enter on that subject again.

The cardinal document, on which all German chronology has been based for thirty years past, is the statement on a papyrus from Kahun, that the rising of Sirius was on the 227th day of the year in the reign of Senusert III. On the assumption that the count of the months was on the wandering kalendar of 365 days, this document would place the end of the xiith dynasty at 1786 B.C. or at 3246 B.C. if the year began with Thoth, or at 1906 or 3366 if it began with Mesore. This reckoning left therefore 201 or 321 years by Thoth or Mesore (or else 1661 or 1781 years), for the interval between the xiith and xviiith dynasties. The shorter periods are entirely impossible in view of the monuments remaining, and of the whole of the historical MSS. The longer period is equally difficult in view of the contemporary remains in other lands; but as the Egyptians accepted it, it was the more possible framework for storing the facts.

All of this position depended on which kalendar had been used in this papyrus. The seasonal kalendar, 365·25 days, was commonly in use for agriculture, as it is now in Egypt. If the Kahun papyrus were dated in this kalendar (beginning in mid-winter) no difficulty remains, as it does not fix anything about the epoch. The Egyptians seem to have been using the year beginning with the month Mesore, while the year beginning with Thoth was nearest to mid-winter, and soon superseded the older count. This retrogression of the nominal months would point to the use of a kalendar of $365\frac{1}{5}$ day, or a day inserted every fifth year. This would cause a retrogression of a month in seven centuries.

By accepting the dating on the seasonal year of $365\frac{1}{4}$, or $\frac{1}{5}$, days, it becomes at once possible to accept the recorded dynastic periods, and to place the monuments in a reasonable scale of time.

The principles which we must follow for a sane view of the many authorities are:—

(1) That of two readings the one which agrees with other facts is to be preferred to one which is discordant.
(2) That we must compare all relevant documents before rejecting any.
(3) That we should only reject a datum when it is contradicted by a stronger one.

As examples of the failure to observe such critical rules we may note:—

(1) The wilful quoting of the viith dynasty as 70 kings in 70 days (an absurd corruption in Africanus) instead of 5 kings in 75 years (the Armenian version of Eusebius).
(2) The ignoring of over thirty Hyksos names (out of 38 stated total) when asserting that "100 years is ample for the Hyksos," though the recorded reigns of four of them cover more than two centuries.
(3) The rejection of all the MS. records in order to accept one kalendar, rather than another which was known to have been in use.

After such methods of dealing with the subject by German writers and their imitators, it is certainly time that we took up a revision of the whole material in view of the concordant kalendar.

To review the chronology we should start from the earliest datum which is universally accepted, and which is in accord with the history of other lands. This is the statement of the rising of Sirius on the 9th day of Epiphi in the 9th year of Amenhetep I. This, on the year beginning with Thoth, gives a date of 1549 ± 1 B.C. with the 365 day year; if on the Mesore year it would be 1669 B.C., or if on the seasonal year it would bring the new year to the close of August; neither of these would be compatible with other data. We must therefore read this as being on the Thoth year of 365 days. This, with the recorded reigns, places the beginning of the xviiith dynasty at 1583 ± 1 B.C. With the new fact before us, shown by the Hyksos scarabs, that the Hyksos rule began directly at the close of the xiith dynasty, the period between that and the xviiith dynasty is resolved thus:—

Egyptian	B.C.	B.C.	Hyksos
	2371	2371	
60 kings xiii dyn.	453	260	6 kings xv dyn.
	1918	2111	
76 kings xiv dyn.	184	518	32 kings xvi dyn.
	1734	1593	
43 kings xvii dyn.	151	10?	Kames
	1583	1583	

These periods have some various readings as xiv 484 (Eusebius) which is less likely than 184 (Africanus); for xv 284 (Africanus) which is worse preserved than 260, Josephus. The xv–xviith are certainly confused in Eusebius, so Africanus is the only authority to follow. The result—quite unsuspected till now—is that the Egyptian and the Hyksos series agree in length, and this is therefore in favour of such a position representing the truth.

The monuments substantiate such a scale of history. The Turin papyrus has a division after No. 55, and a total of about 140 kings here. This supports the division at 60 and a total of 136 kings, considering the very broken state of the papyrus. The average length of reign of 11 kings of the xiiith, known

from the Turin papyrus and monuments, is 8 years; the average of reigns in the xiiith dynasty of Manetho is $7\frac{1}{2}$ years. The number of kings and the length of time are thus substantiated. Looking at the examples of kings' names on known objects, there are 16 within the first half of the xiiith dynasty. After that, and in the xivth, the broken state of the list only leaves a dozen names identifiable on objects. But beside the legitimate dynasty of the lists, there was also a rival line at Edfu, to which monuments of 19 kings may be assigned, as the work and names are like those of the xiiith. Considering the distracted state of the land, and the obvious poverty of work, there is quite as much monumental connection as could be expected.

In the xviith dynasty a different style of small scarabs comes into use, without any border to the name, leading on to the style of the xviiith. There are about 20 names on such scarabs, besides half as many names with *nub*; all of these are probably due to the 43 kings of the xviith, of whom there is no list. That such kings were known later is seen by a reference in the xxth dynasty to a king Ra-men-hetep succeeding Ra-hetep; a scarab, lately found, of Ra-men-hetep belongs to the small and meagre style of those of Ra-hetep. The puzzling group of Antef coffins also seem to come in the xviith, by their links with the style of the xviiith.

To place all this material in order may be impossible until some lists are discovered, but it at least represents an amount of activity which corresponds with the number of kings stated in the list. The last four kings of the xviith are well represented by named objects, probably occupying the last half century before the expulsion of the Hyksos.

Turning to the foreign side, the series of Hyksos names now amount to 36, to substantiate the claim of there being 38 kings in the xvth and xvith dynasties. These scarabs have various styles of borders and of work, which serve for their classification, as shown in the table here and in the designs in *Beth-pelet* I (see next page).

The first five names may belong to the xvth dynasty, as the scarabs are of much better work than others. Apepa I is clearly Apophis, the fourth king in the list of Josephus, and Khyan is probably Siaan (or Staan) otherwise without the guttural as Ionias. It seems unlikely that Shesha, halfway down, can be Assis of the xvth, as he used the most degraded type of line border. The determinative of three water-lines, *mu*, which accompanies seven names, would agree to their being sea-farers, which is implied in the title of the xvith dynasty "Hellenic shepherds kings," as Hellene is the regular equivalent of maritime *Ha nebu* "lords of the north." The xvth dynasty is correctly named from Phoenicia, whence it entered Egypt. Khyan took the title of "embracing territories," and his work is found in Crete and in Baghdad, where wide trade may have carried it.

The doubt as to how far the Hyksos held the Delta as well as Palestine, or whether they were only co-temporary petty princes, has been set aside by finding, late in the degradation in Palestine, a scarab of the Treasurer Ha-al; it was clearly not made in Egypt, as the forms of three signs differ from all the Egyptian examples. There are many scarabs of his from Egypt, a dozen in University College, but the Palestine example proves that he acted in both lands, and therefore the Hyksos rule was united till at least far on in the xvith dynasty.

											NO BORDER
ANTHER		1					1				
SEMQEN		1	1								
KHYAN		2	3	..	1	..	7				
YAQEB-HER		..	4	..	1	..	2				
APEPA I		...	2	...	1	3					2
NEFER-KA-RA		.	.	.	.	1					
NUB-KA-RA		..	1								
KHEPER-RA		...	1	...	1						
KA-RA		.	.	.	.	1					
OA-NEB-RA		..	..	..	..	2					
UAZED		...	1	...	1	...	2				
SEKT		..	1	.	1						
SMA-KA-RA		..	..	..	1						
NEFERUI-UAH-RA		...	...	...	1						
MAOT-NEB-RA		.	1								
MAOT-AB-RA		..	1	2	8	..	7	2			
SHESHA		...	5	2	3	...	4	3	2		
OAQER MU		.	.	.	1						
KHO-USER-RA		..	1	..	1	..	1	6			
SKHONE-RA		...	...	...	...	...	...	7	4		
YKEB-AL		.	.	.	.	.	.	8	1		1
OA		..	..	..	1	..	3	5	1		
OA HETEP-RA		...	...	...	...	...	1	1	1		1
QAR		.	.	.	.	.	.	.	1		
YKHO		..	..	..	..	..	..	..	1		
YO		...	...	...	...	...	...	1	4		
MAO-RA		.	.	.	.	..	.	.	1		
KHO-RA		..	..	..	..	..	..	..	2		
NEB-UAH-AB		..	...	...	...	...	...	...	...		1
NUBY-RA		.	.	.	.	.	.	.	1		
NUB-USER-RA		..	..	..	..	..	..	1			
NEFER-GERG		...	...	...	...	...	1				
ERDU-RA		.	.	.	.	.	.	.	1		
OASEH-RA		OBELISK									
APEPA II		ALTAR									
APEPA III											2

We have now substantiated the dynastic lists by showing that the scale of them is fully in accord with the Turin papyrus and the contemporary monuments, and that there are more remains than might have been expected from a period of decay and foreign invasion: we can see how fruitless it would be to accept the Berlin dictum on the Hyksos periods, "That these numbers are historically absolutely worthless in obviously plain."

This has led us back to the close of the xiith dynasty, and we come to a period which is perhaps more full of detailed dating than any other. The co-regencies are double-dated, and private monuments often bear a royal date.

Strictly speaking the Egyptians did not recognize Amenemhat I as belonging to the xiith dynasty. He was a vezier of the old fellah stock, who took over the kingdom and ran it, marrying the heiress of the Uahka princes of Qau, of Galla ancestry; his son therefore began a new dynasty of the Uahka family. Amenemhat is placed as a mere appendix to the xith dynasty by Manetho, and the xiith is begun by Senusert.

The Turin papyrus is in a fair state here.

	Turin	up to co-regent	highest date	Africanus		Eusebius
Amenemhat I	29	20	30	16	XI	16
Senusert I	45	42	45	46		46
Amenemhat II	30+	32	35	38		38
Senusert II	19	19	19			
Senusert III	30+	38	33	48		48
Amenemhat III	40+	48	46	48		
Amenemhat IV	9. 3. 27	13	10?	8		42
				8		
Sebek nefru	3. 10. 24		3?	8		
				4		
Sum stated	213. 1. 17	212	221	160		198

Three reigns are incompletely dated in T. P. The Greek lists are good in detail, but defective. The total in the Turin papyrus is the best authority. This fixes the xiith dynasty as being from 2584 to 2371 B C.

A date which has been claimed as having "confirmed beyond a doubt" the German result from the Kahun papyrus, is the flax harvest at El Bersheh in the 113th to 117th days of the year. This is now stated to occur in early April (*B.A.R.* I, 48). If, say, on April 10, the New Year would have been on December 16; as this is only 5 days from the shortest day—the natural New Year—it agrees with the fixed seasonal kalendar, and has therefore no chronological meaning.

For the xith dynasty, though obscure, there is a fair amount of material. The conclusion as to the succession, reached independently by Mr. Winlock and by myself, is as follows, with the details here added:—

	born B C.	acceded	reigned	died	B.C.
					(2738)
1 Antefa I	2765	at 27		at 45	2720
2 Antefoă II	2743	23	50	73	2670
3 Antef III	2721	51		56	2665

	born B.C.	acceded	reigned	died	B.C.
4 Mentuhetep I	2699	at 34	14 +	at 49	2650
5 Mentuhetep II	2677	27		32	2645
6 Mentuhetep III	2655	10	46 +	58	2597
7 Mentuhetep IV	2611	14	2 +	18	2593
8 Mentuhetep V	2609	16	8 +	25	2584

The material for this series is (1) the stele of Antefa I; (2) the funeral stele naming 50 years' reign, and steles of two officials naming services under princes 2, 3, 4; (3) no. 5 certainly came between 4 and 6; (4) stele naming 46th year; (5) quarry stele of year 2; (6) Tablet at Hammamat, year 8. The continuity of a family history through the time, on the scale of oriental eldest-son generations of 22 years, gives a framework into which the data can be fitted; the ages of accession and of death seem to be reasonable. Nos. 7 and 8 were brothers.

Though the family must have lasted for about 154 years, yet Manetho states only 43 years for the dynasty. This means that an obscure line of the xth dynasty was regarded as the legitimate order, and only when they were dispossessed by the xith dynasty at 2627 B.C., by the advance of Mentuhetep III, could the xith be regarded as the legitimate line. This is a good instance of the care of Manetho to avoid overlapping dynasties in the history, like the case of Taharqa and Psemtek.

The xth dynasty came to its end then in 2627 B.C., and it is stated to have comprised 19 kings (by Turin papyrus 18 kings, see Borchardt, *Annalen*, p. 45), reigning for 185 years, beginning therefore at 2812 B.C. At about 2700 a general of Antefoă II fought "the house of Khety," which shows that the xth dynasty was continuing the Khety family of the ixth. The xth cannot have overlapped the ixth, as the Khety family then ranged from Aswan to Memphis, and the last of them is found named at Siut and Memphis. The names remaining of this dynasty, on Turin papyrus frag. 47, are Neferkara, Khety, S..h.., Mer..., Sentinen..., H..., and on a scarab Shens-uah-onkh (Brit. Mus.).

The ixth dynasty is stated by Africanus as 19 kings in 409 years, by Eusebius as 4 kings in 100 years. The latter is doubtless correct, the 19 being copied from the xth dynasty. These four kings correspond to four Khety kings known on monuments. The dynasty ruled then from 2912 to 2812 B.C. No trace of the tombs of the ixth and xth dynasties could be found at Heracleopolis.

The viiith dynasty is well set out at Abydos where the list of viith and viiith kings contains 16 names; of these 4 belong to the viith, and the last 12 to the viiith. There are various versions,—

Armenian	5 kings in	100 years
Abydos list	12	
Castor chronicle	14	140
Africanus	27	146

The 5 kings are probably copied from the viith dynasty; as Castor agrees best with the Abydos list, that may well be accepted. There are, however, four or five names more of this period, so there may have been scattered material altogether, quoted as 27 kings. Of the kings of this dynasty there are actual remains of no. 1 Khendu, 3 Snefer-onkh-Ra, 4 Sneferka, 6 Raneka, 7 Telulu,

8 Her-nefer-kau, 15? Her-nefer-sa, 16? Khuaqer, 17 Her-nefer-khnum. Accepting, 140 years as the probable duration, the dynasty lasted from 3052 to 2912 B.C.

The viith dynasty is absurdly corrupted in the copy of Africanus, but Eusebius has the reasonable record of 5 kings in 75 years. The names are

	Turin	Abydos	Monuments
1	Neferkara	Neferkara	
2	Neferes	Neferkara Neby	
3	Kaka Ra, Ab	. . .	Pyramid, Saqqara
4	. . .	Zed-ka-Ra Shema	
5			Khua

Neferkara was a very popular name after the centenarian Pepy II, and on some scarabs with symmetric (Syrian) ornament, it is probably of the viith dynasty kings. Of no. 3, Ab, the pyramid has been found at Saqqarah, with the name Kaka Ra. Of no. 5, Khua, the name is in a tomb just after the vith dynasty. There is then no ground for questioning the length of this dynasty, from 3127 to 3052 B.C. These two dynasties vii and viii were clearly of Syrian invaders, many of whom kept their Syrian name along with the Egyptian, as Neferka Ra Khendy, who is figured with a Syrian and an Egyptian vassal.

For the vith dynasty the lists give

Turin	Abydos	Africanus		Eratosthenes
..6 m. 21 d.	Teta	Othoēs	30	33
. . .	Userkara		[6]	
20 y.	Mery Ra	Phios	53	35
4 y.	Meren Ra	Methousoufis	7	
90+	Neferka Ra	Phiōps	94	100 life
1 y. 1 m.	Meren Ra	Menthesoufis	1	1
	Neteren Ra	Nitokris	12	6
	Menka Ra			
			203	

The Turin papyrus must be wrong about Pepy I, as 37 years are guaranteed by the biennial cattle census. If the figures of Africanus be accepted, the missing reign of Userkaf was of 6 years, and the dynasty is dated to 3330–3127 B.C. The Nitokris of Africanus seems to be the equivalent of Neteren Ra, but Menka Ra is unexplained. There may be some tangle confusing Menkaura + Rhodope of the third pyramid with Menkara + Nitokris who was "most beautiful and ruddy," but it cannot be unravelled.

The vth dynasty is well preserved in the lists.

Turin	Abydos	Saqqarah	Africanus		taken
. . . . . kaf 7	Userkaf	Userka	Userkeres	28	8
. 12	Sahu Ra	Sahu Ra	Sephuris	13	13
. . . . .	Kakau	Neferarka Ra	Neferkheres	20	20
. 7	Neferef Ra	Shepseska Ra	Sisiris	7	7
. . . . .	. . . . .	Khonefer Ra	Kherēs	20	20
. . . . . 30+	Neuser Ra	. . . . .	Rathouris	44	44
Hermenka 8	Hermenkau	Hermenka	Menkheres	9	9
Zeduika Ra 28	Zedka Ra	Maotka Ra	Tankheres	44	28
Unas 30	Unas	Unas	Onnos	33	31
				218	180

Two numbers in Africanus need correction by Turin. The proposal to reduce this total to 140 years, owing to the biography of Ptahshepses, should be examined. He was born under Menkaura, and favoured at court by Shepseskaf. If he were 15 at the death of Shepseskaf, he would be 24 under Imhetep and 92 at the accession of Neuser Ra, to whose pyramid service he was attached. There would be no improbability in his living to 95, like two kings of the iind dynasty and one of the vith. From the position of the Nile flood in the year, Borchardt deduces that the Neferarka Ra acceded between the limits 3460–3120 B.C. Here we reach 3489 for accession, a near enough connexion. The dynasty is dated to 3510–3330 B.C.

The ivth dynasty was complex.

Turin		Abydos	Saqqarah	Africanus		Eratosthenes		Herodotus	taken
Snefru	24	Snefru	Snefru	Sōris	29				29
. . . . .	23	Khuf	Khefuf	Soufis	63	Soufis	29	50	63
. . . . .	8	Zedef Ra	Zeduif Ra	Ratoises	25	Rauōsis	13		co.
Khof Ra . .		Khof Ra	Khof Ra	Soufis	66	Saofis	27	56	66
. . . . .		Menkau Ra	. . . . .	Menkheres	63	Moskheres	31		63
. . . . .		. . . . .	. . . . .	Bikheris	22	Biurēs	10		co.
. . 18 or 28		. . . . .	. . . . .	. . . . .		. . . . .			?
	4	Shepseskaf	. . . . .	Seberkherēs	7				7
	2	. . . . .	. . . . .	Thamphthis	9				9
				stated	284				237

The long reigns stated by Africanus offend some critics, who would see them reduced as in the Turin papyrus or Eratosthenes. The clue to the figures seems to be in a custom of co-regencies. Khufu certainly had a co-regent Khumu-Khuf, the "friend of Khufu," who was associated far on in the pyramid building, as he is named in the highest construction chamber. He had the Horus name *Neb*...., while Khufu had *Mezer*, and both throne names are placed on one stone, so there certainly were two kings. Khumu-Khuf disappeared, and another associate came in, called Razedef. His name follows that of Khufu on the lists of Abydos and Saqqarah, though Africanus puts him after the three great kings. He also disappears, and if he were associated when Khufu was 50 (see Herodotus), and remained for 13 years (Eratosthenes), he disappeared at the accession of Khof Ra. A parallel to this is seen, when Khof Ra is given 56 years by Herodotus, and then Biurēs comes as co-regent for 10 years (Eratosthenes) to the end of the reign when Menkaura succeeds. Thus the co-regencies were

Khufu alone	23	
Khumu-Khuf	(27)	50
Razedef		13
Khufu total		63
Khof Ra alone	56	
Biurēs	10	
Khof Ra total	66	

All of these figures, except (27), appear in the sources named above. At least it must be granted that, with two co-regencies, the reign of Khufu must have been a long one.

An argument for the shorter reigns has been drawn from the history of Sekhemka·Ra. This is due to the mis-statement that he lived under Khof Ra and Menkau Ra, and on to Sahu Ra. But the list in his tomb only states that he was "devoted," *amakh*, to the kings, a usual form of divine honour to the deceased.[1] Sekhemka Ra may have been born under Menkau Ra, but there is nothing here to determine his age. Another survival needs attention, though not yet quoted in argument. Nesutpu lived under Khof Ra and Sahura; this involves 63 + 7 + 9 + 8 years, or 87 years, beside some time in the terminal reigns (*Ann. Serv.* xxv, 80). Another such long life is that of Mertitef, who was *ur amt* "greatly loved" of Snefru and Khufu and *amakh* to Khof Ra. If she were 17 at the death of Snefru she would have reached 80 under Khof Ra. All of these long lives which have been carelessly quoted as evidence, without attending to the recorded reigns, prove to be not at all unlikely. The minimum ages required are 92, 87, 80, while kings of the iind dynasty are stated in the Turin papyrus to have lived to 95, 95, 73, 72, 70. There is then not a single objection to raise against the list of probable length of reign for the ivth dynasty, amounting to 237, or from 3747–3510 B.C.

Here may be noticed another datum which has been supposed to shorten the history of these times, though no explanation has yet been provided. At the end of the viith dynasty in the Turin papyrus there are two broken lines of text; the first relates to the number of kings from Menes, and their years; the second is lost, except the number "years 955 days 10 + x." Now the number of years stated by the dynastic reckonings of iv–vii, already discussed and fairly clear, is 695, which would leave only 260 years for the first three dynasties. The whole i–vii dynasties amounts to 1273 years. There is, then, some misunderstanding in applying these figures; they may possible have been the total from the Sudany to the Syrian dynasties, iii–viii, which we reckon as 924 years, but might have been rather longer owing to obscure kings, or counting co-regencies.

We now reach the decisive contemporary document of the Annals. This was a record of the prehistoric kings' names, and of the principal event and the Nile register of every year of dynasties i to iii. It expanded later, and in the dynasties iv and v many events of each year were recorded. The whole document was engraved on both sides of a row of slabs of black quartzose rock, described as "amphibolic diorite," which would be commonly called black basalt. It would be impossible to have one slab nine feet long and only $2\frac{1}{2}$ inches thick: There must have been several divisions. As it would be difficult to have a joint in the middle of a year space, so a whole number of spaces in each row must have been fitted in. This almost compels the width of the slabs to be uniform, in order to get on each slab a whole number of spaces in each row. Hence there is need to have slabs of equal width. According to the existing pieces it would be impossible to have four, five, seven, eight, or nine slabs, so six is the probable number. Each slab would then be about 16 inches wide and 27 inches high. It would weigh about 90 lbs. If these were built

[1] The meaning of *amakh* seems to be *amă* "loving," *ăkh* the "spirit," or glorious deceased. The present example of the *amakh* system is in the class of royal widows and their officials, which are left after an African king's death, and continue for long as a guild, by recruiting fresh girls into the service of the spirit, so these might all be called *amakh* or loving the spirit. So long as endowments were not alienated, any such system would form happy sinecures.

up, it is hard to see how they would be held for eight feet length, and be visible on both sides. It is possible that they were kept stored on edge on a shelf, and taken down for reference.

Unhappily these are only known parts of two slabs, broken all round, and mostly worn away, as door sills in late buildings: four small fragments only suggest, by the coarseness of engraving of Khufu, that the Annals were perhaps first engraved by Seneferu, and added to down to the earlier half of the vth dynasty.

The slabs are published by Schäfer, *Ein Bruchstück altägyptischer Annalen* (Abh. d. Kön. Pr. Akad. d. Wiss., Berlin 1902), and *Le Musée Égyptien* vol. iii, pls. xxiv–xxxi, Cairo 1915; discussed by Borchardt, *Die Annalen . . . des Alten Reiches,* Berlin 1917.

On the front of the slabs were engraved (1) a row of prehistoric kings of Upper and Lower Egypt, perhaps also figures of the mythical and divine dynasties; (2) a row of yearly divisions belonging to the first dynasty as far as king Aha; (3) a row naming Semerkhet and completing the 1st dynasty; (4) a row of the iind dynasty naming Neteren (Mu-nutri); (5) a row including Khosekhemui, the close of the iind dynasty; (6) a row ending the iiird dynasty and beginning the ivth with Snefru; (7) a row of the ivth dynasty naming Khufu. On the back were much more diffuse records of the end of the ivth and three or four kings of the vth dynasty.

The problems of the relations of the pieces cannot yet be completely settled owing to insufficient data. The proposed restoration by Prof. Borchardt (1917) is probably just, within a few years, and may be taken as the best approximation. The compulsory division—if equal slabs—into 3 or 6 parts, would make it needful to avoid a joint cutting a year-space; there must have been a whole number of year-spaces in each slab. The total number in each row must have been a multiple of six.

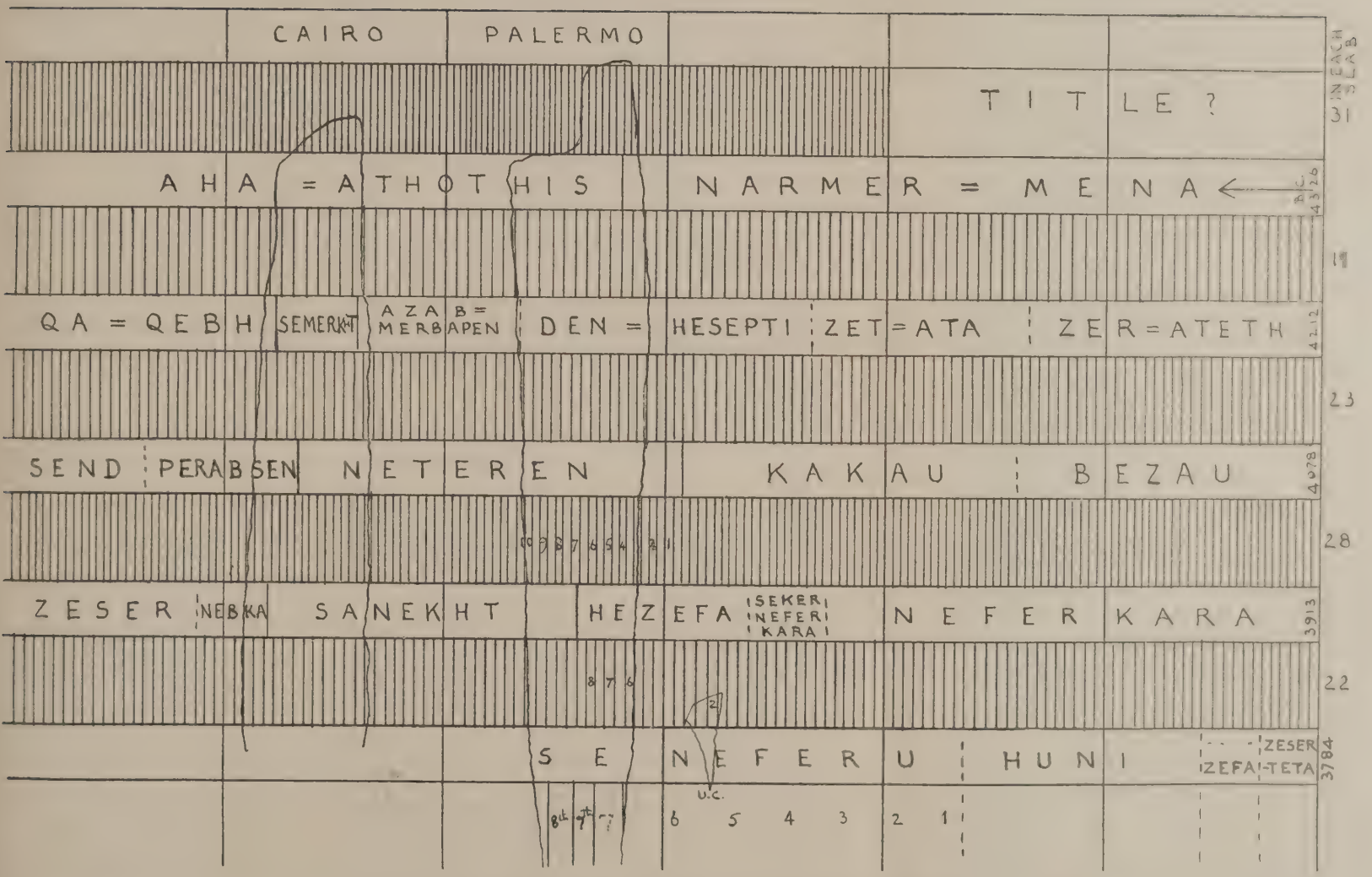
Borchardt	+ 2	each slab
184	186	31
112	114	19
136	138	23
166	168	28
130	132	22

That each of Borchardt's numbers is 2 less than a multiple of six, indicates that the series contained two more in each row. This shows what is the intended relation of the numbers of the sections.

Altogether three variations have been proposed, (A) *Ancient Egypt* 1916, (B) Borchardt 1917, (W) Weigall 1925. The most direct test of these is at the iiird dynasty, where the Turin papyrus gives continuous lengths of reigns, as follow, from two reigns at the end of the iind up to the end of the iiird dynasty, in years and months.

	x, 8·3, 11·8 or 21 or 31	27·2,	19	19·3	6, 6, 24	T.P.
by B.	57	29	9?	16	37	Annals
by A.		37				

W. makes here entirely arbitrary changes in the scales of years without any evidence, and therefore cannot be accepted if other solutions fit. The A scale



PLAN OF THE ANNALS OF DYNASTIES I–III.

This is about a half of the height on the stone, and about one ninth of the length, here compressed for convenience. Each compartment represents one year. The names of kings are over their compartments. The top line was of prehistoric kings of north and south, one in each compartment. The outlines of the two remaining pieces in Cairo and Palermo, are drawn.

The whole length is here divided into 6 equal slabs, which would be about 90 lbs. weight each. Division into 4, 5, 7 or 8 equal parts is impossible, by the existing slabs. The six slabs would be nearly square. The number of compartments on each line of a slab is stated at the right hand. The unfixed divisions between reigns are in broken line. The numbers placed in some compartments are those of the biennial cattle census, which indicate the beginning of a reign, though lost.

would not leave enough room for later reigns before Snefru. The B scale fits fairly well, if there be co-regent reckonings in T. P. giving 19 years in place of 9 for Nebka in the Annals, and 19 in place of 16 for Zeser. There seems to be good ground for a short reign for Nebka, as a few years would suffice for all the rock cutting and granite work prepared for his tomb; so the 8? years, supposed to be indicated very faintly on the Annals, would fit better than 19 years of the papyrus. The 19 years stated for Zeser suggests that Nebka might have had less than 9 years.

Having now reviewed the Annals as a whole, we can proceed with the iiird dynasty. If the scale of the fragment of Snefru is projected backward, it would leave a space equal to 37 divisions of row 5 above. If row 6 up to the end of the iiird dynasty was like row 5, then 37 years would be in this line. Now after Zeser there are reigns of Zeserteta 6, ... zefa 6, Huni 24 years, or 36 in all. So this accords well. The whole material is then:—

Annals		Turin	Abydos	Saqqarah	Monuments	Africanus	
30	27	Bebti	Zazay	Beby	Sanekht		
27	19	Nebka	Nebka		Nebka-Ra	Nekherōfēs	28
	19	Zeser	Zesersa	Zeser	Zeser	Tosorthros	29
					repetitions	Turis	7
						Mesōkhris	17
						Soufis	16
36	6	Zeserti	Teta	Zeserteta	Zeserteta	Tosertasis	19
	6	...zefa	Sezes	.....	.....	Akhes	42
		....	.....	.....	.....	Sēfouris	30
	24	Huni	Neferka Ra	Heni	.....	Kerferēs	26
93 − x							214

The total length on the Annals is here stated, from which two or three years might be deducted for divided years. This extends then from 3838–3747 B.C.

The material for the iind dynasty is as follows:—

Annals		Turin	Abydos	Saqqarah	Monuments	Africanus	
82		.....	Bezau	Neterbau	Hetepsekhemui	Boethos	38
		Kaka	Kakau	Kakau	Raneb	Kaiekhōs	39
48		..neteren	Banetern	Banetern	Neterenra	Binothris	47
37		.....	Uaznes	Uaznes	Perabsen	Tlas	19
		Send	Senda	Send	Send	Sethenēs	41
						Khairēs	17
58	∴50	Neferka		Neferkara		Neferkherēs	25
	8·3	Neferkaseker		Sekerneferkara	Khosekhem?	Sisōkhris	48
17	11·8	Hezefa		Huzefa	Khosekhemui	Khenerēs	30
243 − x							304

It does not seem possible to accept other than the reckoning of the Annals, though there is a grave discrepancy in Hezefa reigning 11 years 8 months, and Khosekhemui undoubtedly 16 or 17 years. It seems impossible to avoid the acceptance of Hezefa as this king, so there must have been a long co-regency. The dynasty lasted from 4078–3838 B.C.

For the 1st dynasty the material is more concordant.

Annals		Turin	Abydos	Monuments	Africanus		Eusebius
. . . . .	61	Mena	Mena	Narmer	Mēnēs	62	62
. . . . .	53	At	Teta	Aha	Athōthis	52	27
Athet		. . . . .	Ateth	Zer	Kenkenes	31	39
. . . . .	101	. . ăa	Ată	Zet	Onenefēs	23	42
. . . . .		Hesepti	Hesepti	Den	Ousafaidos	20	20
. . . . .		Merbapen	Merbapen	Azab	Miebēdos	26	26
Semerkhet	8	. . . . .	Shemsu	Semerkhet	Semempses	18	18
. . . . .	28	. . . bh	Qebh	Qa	Biēnekhes	26	26
	252 − x					263	260

With the exception of the 10 years less of Semerkhet in the Annals, there is as close an agreement as can be expected, looking at the uncertainty of a divided or double compartment at the junction of reigns, or of different reckoning of the odd months in the Greek version. The reigns of Kenkenes to Miebedos total 100 compared with 101 spaces in the Annals. The dynasty was from 4326–4078 B C.

A subject which has been hitherto neglected is that of the total ages of some kings as recorded in the Turin papyrus. Having the total age, and the accession and death dates, the life history can be put together as follows:—

	birth B.C.	accession age	accession B.C.	reign	death age	death B.C.
Merbapen	4185	58	4127	15	73	4112
Semerkhet	4176	64	4112	8	72	4104
Qebh	4141	37	4104	26	63	4078
Neterbau	4135	57	4078	38	95	4040
Neteren	4042	43	3999	52	95	3947
Perabsen	3998	59	3947	11	70	3928
Neferka	3933	20	3913	50	70	3863
Neferkaseker	3880	17	3863	·8	25	3855
Hezefa	3872	17	3855	17	34	3838
Bebti	3854	16	3838	29	45?	3809

The bracketed names point to accession of brothers. The ages of these kings 95, 95, 73, 72, 70 confirm the probability of the long ages of officials, noted before.

As the kings of the first dynasty are stated to be descended father to son, the average reign points to a late age at the birth of the succeeding son. This seems connected with some such system as that of the Mazai tribe of Kenya at present. The young men have a wandering period, then 9 years as junior warriors, then perhaps as long as senior warriors; it is not till near 40 that they become elders, and for the first time form a continuous marriage, for as warriors they only have temporary connections. In such a system it would be natural that an heir was snecessarily the child of the continuous marriage, and thus a father to son unit of nearly 40 years might be the line of succession, and result in a late age of accession.

We can now finally sum up the whole of the dynasties in order.

I. Mena	61	4326 B.C.	II. Bezau	38	4078
Aha	53	4265	Kakau	41	4040
Zer	31	4212	Baneteren	52	3999
Zet	23	4181	Uaznes	19	3947
Den	30	4158	Senda	15	3928
Azab	16	4128	Neferkara	50	3913
Semerkhet	8	4112	Seker Neferkara	8	3863
Qa	26	4104	Hezefa	17	3855
	248	4078		240	3838

III. Bebti	29	3838	IV. Sneferu	29	3747
Nebka	6	3809	Khufu	63	3718
Zeser	19	3803	Khofra	66	3655
Zeserti	6	3784	Menkaura	63	3589
Sezes	6	3778	Shepseskaf	7	3526
Heni	25	3772	Imhetep?	9	3519
	91	3747		237	3510

It should be remembered that the six fold division of the Annals requires 2 years more in each of 4 rows, which would add 8 years to the above total.

V. Userkaf	8	3510	VI. Teta	30	3330
Sahura	14	3502	Userkara	12?	3300
Neferkara	20	3488	Pepy I	53	3288
Shepseskara	7	3468	Merenra	7	3235
Khoneferra	20	3461	Pepy II	94	3228
Neuserra	44	3441	Merenra	1	3134
Hermenkau	9	3397	Netaqerti	6	3133
Zedkara	28	3388		203	3127
Unas	30	3360			
	180	3330			

VII. Neferkara		3127	VIII. Neferkara Khendu		3052
Neferkara Neby			Hermeren		
Kakara Ab			Snefer-onkh-ra		
Zedkara Shema			Sneferka		
Khua			Nekara		
	75	3052	Neferkara Telulu		
			Herneferka Baura		
			Neferkara Pepysenb		
			Sneferka Onnu		
			....ikaura		
			Neferkaura		
			Herneferka		
			Neferarkara		
				140	2912

IX.	Nebkaura Khety I		2912
	Abmeryra Khety II		
	Uahkara Khety III		
	Kameryra Khety IV		
		100	2812

X.	Neferkara		2812
	Khety		
	S...h...		
	Mer....		
	Sentinen...		
	H....		
	Shens		
	and 12 others		
		185	2627

XI.	Antefa I	18?	2738?
	Antefoă II	50	2720
	Antef III	5?	2670
	Mentuhetep I	15	2665
	„ II	5	2650
	„ III	48	2645
	„ IV	4	2597
	„ V	9	2593
		154?	2584
count of the dynasty begins			2627

XII.	Amenemhat I	20	2584
	(to co-regency)		
	Senusert I	45	2564
	Amenemhat II	35?	2519
	Senusert II	19	2484
	Senusert III	33?	2465
	Amenemhat III	48?	2432
	Amenemhat IV	9	2384
	Sebeknefru	4	2375
	stated as	213	2371

Egyptians			Hyksos		
XIII.	60 kings 451 years	2371–1918	XV.	6 kings 260 years	2371–2111
XIV.	76 kings 184 years	1918–1734	XVI.	32 kings 518 years	2111–1593
XVII.	43 kings 151 years	1734–1583		Kames 10? years	1593–1583

On passing from the xviiith dynasty to later times, there are several landmarks which are fairly well fixed, and which need to be set out as dividing the whole period, while passing over the intervening details which are not decisive. The earliest is that dating which we have already used as a starting point for tracing the earlier ages.

A Amenhetep I year IX in 1549 B.C. ± 1 by Sothis.
B Tehutmes III, reign 1501–1447 B.C. by new moons.
C [Amenhetep IV contemporary of Burnaburiash about 1385.]
D Ramessu I *Menpehra*, = Menophres of 1317 cycle.
E Ramessu II horoscope of birth 1318 (reign ∴ 1295–1229).
F Ramessu VI horoscope of birth 1198 (reign ∴ 1153–1148).
G [Solomon marriage about 950.]
H [Rehoboam Vth year about 917.]
J Takelat II XVth year 838 B.C. by Sothis feast.
K [Pedubast reign including 776 B.C., 1st olympiad.]
L [Shabaka (viceroy acting as king) in 725, before siege of Samaria.]
M [Taharqa acting as viceroy in 701.]
N Taharqa defeated by Asshurbanipal, 667.
O Psamtek I accession 664.

With eight fixed points, and six approximations as checks marked [ ], the whole later period can be dealt with in sections, and the details of each section spaced out, so as to see the limits of uncertainty of the separate items.

A, B. In the first section Amenhetep I, yr. IX, 1549, to Tehutmes III, yr. I, 1501. 48 years + 8, = 56 years from Amenhetep, yr. I.

Manetho in Josephus		Rearrange		Max. date
Tethmosis	25 y. 4 m.	Aohmes	13	3
Khebron	13 y.	Amenhetep I	20·7	10
Amenophis	20 y. 7 m.	Tehutmes I	25·4	6
Amesses, sister	21 y. 9 m.	Tehutmes II	12·9	
Mefres	12 y. 9 m.		58·8	

Amesses, the sister, is evidently Hatshepsut, and as her reign was always contemporary with others she does not enter into the total. Looking to the uncertainty of the observation of Sirius (a single day making 4 years' difference), and the two years of doubt either way, there seems no question that the 58 y. 8 m. must be accepted in place of the 56 years already named. The dates therefore must have been

	accession	death
Aohmes I	1573	1560
Amenhetep I	1560	1539
Tahutmes I	1539	1514
Tahutmes II	1514	1501
Tahutmes III	1501	1447

The agreement of the months in Manetho's dates with the official records is set out in *Students' History* II, 60–1. The accuracy shows what was the real character of the history when compiled, before being ruined by copyists.

B, E. The next section is from the accession of Amenhetep II in 1447 to the birth of Ramessu II in 1318 B.C. This last being fixed we can see that, as Sety reigned 23 years, Rameses I must have been about 1320 B.C.

D. Now this date for Ramessu I, Men-peh-ra, is close to the "era of Menophres" of Theon, at the Sothis cycle in 1317 B.C., and that point may well be accepted; this involves that Ramessu II was 23 at his accession.

Having this fresh terminus fixed, we find the filling of the period of probable co-regency of Amenhetep II 1449 to Ramessu I 1318, 129 years in all.

By resulting dates		Manetho	Monuments		
1449	Amenhetep II	26	26	70	
1423	Tehutmes IV	9 y. 8 m.	8		
1413	Amenhetep III	30 y. 10 m.	36		
1377	Akhenaten 35 y. 5 m.	15 y. 5 m.	17th		35 y., amend 15 y.
1361	Smenkh-ka	10 3			
1351	Tutonkhamen	12 3	60·6 = 59 +x		by papyrus
1339	Ay (Josephus)	12 5			
1328	Sety-mer-amen	6			
1322	Heremheb	4 2			
1318	end		129+x		

Here the monumental dating of 3 kings amounting to 70 years, and the total of the Aten party and Heremheb as 59 years (called, in bigotry, years of Heremheb)

make up the total required of 129 years. The detail of the 59 years is given by a fragment of Manetho in Theophilus which seems very exact. But for Akhenaten the reading should be 15 years 5 m. which with a fraction at the beginning might come to the 17th year: 10, 20, and 30 are easily confounded in hieratic. The difference of the total 60 y. 6 m. from 59 may be accounted by some small overlap of reigns, or by the papyrus with 59 having been written a year before the death of Heremheb. The king Sety-mer-amen has not been found on monuments, but he may have been some tool whom Heremheb used for his own ends, and then discarded.

E, F. The course of Ramesside history ran as follows:—

Ramessu I	began 1318	
Sety I (22 years)	1317	
Ramessu II	1295	for 66 years' reign
Merneptah	1229	

Ramessu VI was born 1198 B.C.; he was the fifth son of Ramessu III, and presumably reigned at about 1160; so there are about 68 years to be filled after Ramessu II. The amounts recorded are

	Josephus	highest
Merneptah	19·6	8+
Sety II		5?
Amenmessu		1?
Tausert and Siptah		7
Arisu		1?
Setnekht		1
Ramessu III.		32
„ IV		8
„ V		4
		76

The total cannot be less than this, if we accept Merneptah as 19 y. and allow for portions of years counted in dating. Accepting 76 years the series would be

Merneptah	began 1229 B.C.	
Sety II	1210	
Amenmessu	1205	
Tausert	1204	
Arisu	1197	
Setnekht	1196	
Ramessu III	1195	at 22 y.
„ IV	1163	
„ V	1157	
„ VI	1153	at 45 y.

Manetho states that in Tausert's reign (1204–1197) was the siege of Troy, and Eusebius more precisely sets the taking of Troy to her last year, 1197. This great landmark of early Greek history was thus accepted when the

chronicle was written, though variously dated by Greek authors between 1209 and 1171, even after excluding the extremes.

F, J. From Ramessu VI at 1153 to 1148 (?) B.C., there were 310 years to 838 B.C., the Sothis festival in the xvth year of Takelat II, or 296 years to Takelat y. 1.

The later Ramessides were all children of Ramessu III; they are so figured and listed, and the names in the list of sons of R. III agree in order with the same names of the kings down to R. XII. The series given (*Stud. Hist.* II, 140) can now be amended by further details as follows:—

	born	accession		death		reign	latest dating
	B.C.	age	B.C.	age	B.C.		
Ramessu III	1224	29	1195	61	1163	32	32
IV	1200	37	1163	43	1157	6	6
(son) V	1178	21	1157	45	1153	4	4
VI	1198	45	1153	53	1145	8	?
VII	1194	49	1145	56	1138	7	7
VIII	1190	53	1138	53	1137	?	0
IX	1186	49	1137	49	1137	?	0
X	1182	45	1137	64	1118	19	19
XI	1176	58	1118	64	1112	6	6
XII	1170	58	1112	87	1083	27	28

There is no improbability in such a family history, Ramessu III being 54 when his last son was born, and that son living to 87; both ages are well within the precedents in other times.

The xxist dynasty was a double line, the High Priests of Thebes (descended from the heiress of Ramessu VI), and a new family in the Delta at Tanis and Memphis, deriving probably from a Ramesside daughter and from one of the multitude of "sons of Ramessu" who are often mentioned. Breasted treats this dynasty as a mixture, supposing (with Daressy) that Pinezem I of Thebes was adopted in the Tanite line, which he accepts as the standard. This is based on the royal titles claimed at Thebes, while dating mummy wrappings in the priestly line; but it might be due to a separation of the functions at Thebes, and there are no monuments of Pinezem or any other Theban north of Abydos.

The Theban line is the better known, as the multitude of inscribed objects gives a large amount of detail. The dates are often double, in both the royal and priestly lines. The ranges of double dates are set out by Breasted, (*B. A. R.* IV, 296), and the cautions as to the meaning of the dates, discussed in *Stud. Hist.* III, 191; the genealogy at p. 189.

The contact with the xxiind dynasty is given by Sheshenq I marrying Karamat daughter of Hor Pasebkhanu last king of Tanis. The yr. xv of Takelat II being fixed to 838, the reigns of intervening kings bring the beginning of Sheshenq I to 948 or 940 B.C. by different ways of reckoning the co-regencies.

H. A check on this is the date of Solomon, placed to 960–921 by Assyrian synchronisms (Levy). B.C. 921 = 1 Rehoboam, ∴ v = 917, = xx Sheshenq I, ∴ s. 1 = 936 B.C. This favours the 940 B.C. reached above, which results from taking the reign as from the end of the previous co-regency until the death of each king. The date 948 is from the less likely method of dating up to a succeeding co-regency. Having then the 1st year of Sheshenq at 940 B.C., Usarken's death at 895 suggests that the junction of generations came thus:—

Hor Pasebkhanu	born 1018	(high priest list)	Sheshenq I
Karamat daur.	born 990	(when P. 28)	born 1000?
„	married 970	(at 20)	married at 30
Usarken	born 968		succeeded at 60
„	died 895	(at 73)	died at 81

For a political marriage, doubtless a young daughter of the king would be fitting for the general Sheshenq, an adventurer.

G. Another connection may be noticed; Solomon reigned at 960–921 (see above); he married a sister of Karamat at about his year V, 955, long before finishing the temple and palace. In his year V, Pasebkhanu's younger daughter whom he married would have been born 975, when the father was 43. This link seems also quite reasonable.

Thus the xxist dynasty with all its uncertainties is secured at both ends. At the rise of the Tanite succession it presumably begins at the death of Ramessu XII, 1083 B.C., as Nesibanebdadu of Tanis gives orders for the repair of Karnak; Herhor must have taken over very soon, as he would have been already about 73 at the death of Ramessu XII. At the end of the xxist the Tanite links on to Sheshenq, as general and son-in-law of the Tanite, to take over affairs. Between these links we have to see how the two lines of rulers are best placed, in 143 years, 1083 to 940 B.C.

Manetho		Monuments	highest	adopt.	begin B.C.
Smendes	26	Nesibanebdadu		26	1083
Psusenes	46	Pasebkhanu I	17	46	1057
Neferkheres	4	?		4	1011
Amenofthis	9	Amenemapt		15?	1007
Osochor	6	?			
Psinaches	9	Si-amen	17	17	992
Psousennes	35	Hor Pasebkhanu		35	975
				143	940

The total can best be adjusted at the reign of Amenemapt. The 49 years that have been claimed for him by another writer, probably refer to dating under Menkheperra the Theban. On a basis of 24-year generations, this dynasty works out as having accessions from 18 to 52 and deaths at 42 to 76.

At Thebes the line began by action of Nesibanebdadu of Tanis, but that must have been brief, as Herhor was about 73 (by the genealogy) and he had still 6 years to reign.

	birth B.C.	accession age	accession B.C.	reign	death age	death B.C.	highest date
Nesibanebdadu			1083	5?		1078?	
Herhor	1156	78	1078	6	84	1072	6
Piankh, son	1134			0			
Pinezem I	1112	40	1072	25*	65	1047	
Menkheperra	1086	39	1047	49	88	998	49
Pinezem II	1040	42	998	22	64	976	22
Pasebkhanu	1018	42	976	36*	78	940	12

Any further definition by year dates may easily shift over some years here marked *, as these are only made up to agree with the known total and harmonize the life dates.

J, O. The next stage of history is from Takelat II, 838 B.C. to the accession of Psemtek I, 664 B.C. We have already laid out the earlier part of the xxiind dynasty. Taking the interval between the earliest and the latest years recorded in each reign, the total is 190; no doubt this should be extended, but not greatly, in view of the later terminus. The fixed point by Sothis feast is under Takelat II: the average generation is 22 years.

	born	accession		reign	death	
	B.C.	age	B.C.		age	B.C.
Sheshenq I	1000?	60	940	21	81	919
Usarken I	958	49	919	24	73	895
Takelat I	946	51	895	18	69	877
Usarken II	924	47	877	25	72	852
Sheshenq II	902	50	852	0	50	852
Takelat II	880	28	852	20	48	832
Sheshenq III	858	26	832	47	73	785
Pamay	836	51	785	4	55	781
Sheshenq IV	814	33	781	33	66	748

After Takelat II, where Africanus ends this dynasty, there was a division, and the xxiiird dynasty branched from this, see *Recueil* 1913, *Ancient Egypt* 1914, 40. The xxiiird follows thus, the 1st year of Pedubast being dated to year vii of Sheshenq III.

		accession	Africanus reign	death
XXIII	Horsăast	832		826
	Pedubast	826	40	786
	Takelat III	786		770
	Usarken III	770	8	762
	Psammus	762	10	752
	Zēt	752	31	721
XXIV	Bakenranf	721	6	715

Pedubast dated to 826–786 is stated to have been contemporary with the 1st olympiad, 776 B.C., so the old compilers were not far from our course above.

This period is imperfect in Africanus, Horsăast and Takelat III being omitted. The entry Zēt is simply an abbreviation meaning "to be sought," as in other MSS. It only marks an hiatus without any name. The missing name (Pankhy?) or names, reflected the broken state of the country, which for a century later was held by a couple of dozen little principalities, much like the Mamelukes, as described under Pankhy (727) and Esarhaddon (670 B.C.). No one line was strong enough to be a suzerain, except the foreigner.

Upon this mass of broken states there came the Ethiopian conquest; during that dynasty there was a system of appointing the heir-apparent to act as viceroy in Egypt, while the old king ruled in Napata. Such a viceroy would be regarded by Asiatics as being the Ethiopian king, as we find in the Book of Kings referring to Shabaka and Taharqa.

The great stele of Pankhy describes his reconquest of the land in 727 B.C., and is dated in year xxi, so his reign began in 748. This is the date of Manetho for the end of the xxiind dynasty; further it is just after the close of the names of the xxiiird dynasty by Psammus, 752. So this seems to have been the historic continuity. Zēt is "to be sought" in the welter of princes, or in Pankhy.

The xxivth dynasty, Bakenranf (721–715), was a rebellion against Pankhy, showing a weakening of Ethiopian control. His being burnt by Shabaka may have been to imply that he was only a mock king, like the New Year king (*Ancient Egypt* 1924, 97). The xxvth dynasty is rendered thus:—

Africanus		Eusebius		Monuments		begin B.C.	Jewish	
Sabakon	8	Sabbakon	12	Shabaka	12	717	Sua viceroy	725
Sebikhōs	14	Sevēkhos	12	Shabataka	12	705		
Tarkos	18	Tarakos	20	Taharqa	26	693	Tirhaka viceroy	701
	40		44	„ end	667	50		
							Greek	
						730?	Tafnekht I	
						721	Bakenranf to	715
		Ammeres	12	Amenardus				
Stefinates	7	Stephinates	7			685		
Nekhepsos	6					678		
Nekhau	8					672		
Psammetikhos	54					664–610		

Amenardus, entered by Eusebius as beginning in 697, was associated as co-regent at the end of Shabaka, dated year 12. As a daughter of Kashta she was younger than Shabaka, but was co-regent at the end of his reign; being entered as part of the Saite dynasty by Eusebius, she may have been the viceroy in Egypt for part of the time. The perfect condition of her statue of alabaster at Thebes rather suggests that she was not hated in Egypt.

Pankhy's stele records his reconquest in 727; by 725 Shabaka was viceroy; in 717 Pankhy died, as Shabaka then begins his full reign. The shorter reign of 18 or 20 years attributed to Taharqa would refer to an assumption of independence of the Saite line, probably due to the advance of Esarhaddon in Palestine at 673, which would seem an opportunity to denounce Ethiopian rule.

After reaching Psamtek there is no uncertainty in the scale of history, as there are plenty of authorities and the later time is not questioned.

Flinders Petrie.

TWO GLAZED HIPPOPOTAMUS FIGURES HITHERTO UNPUBLISHED.

The glazed figure of a recumbent hippopotamus shown in three positions (Figs. 1–4) was found near Harageh, at the entrance to the Fayum, by the expedition of the British School of Archaeology in Egypt, in the season 1913–14, in a cemetery of the Middle Kingdom, grave 56. It was a shaft tomb, probably of the xiith dynasty. The only other noteworthy objects were a light green glazed pottery dog and a "salad dressing" pottery bottle (Engelbach, *Harageh* p. 12, pl. xiv, and pl. lviii, 56.)[1]

The Harageh hippopotamus lies, with its head turned to its right, resting between its fore-legs. The noteworthy points of the figure are the natural pose, expressing complete restfulness, and the extremely fine modelling of the head, in the rendering of which the blue glaze specimens often fail.

It is difficult to show in a photograph the delicate relief modelling of the original, and the damaged patches cause some confusion that does not occur when viewing the actual object, yet, if these views be compared with other published specimens, a very high place, in point of verisimilitude, will, I think, be accorded to the Harageh figure.

Like many of the period, this model was originally covered with blue glaze, decorated with designs in black outline representing the flora and fauna of the marshes frequented by the animal, which was seldom seen except in glimpses through such a fore-ground. The glaze on our example has in places entirely perished and has turned absolutely white, except for a few patches of a light forget-me-not blue, originally doubtless considerably deeper in tone. The outlined designs fortunately remain more or less visible wherever the glaze is preserved.

In the course of his researches into representations of plants and animals in ancient Egypt, a list of examples of the *decorated* hippopotami has lately been published by Dr. L. Keimer with numerous plates and figures, some of which have never before been published (Nouvelles Recherches au sujet du *Potamogeton lucens* dans l'Égypte ancienne et remarques sur l'ornementation des hippopotames en faïence du Moyen Empire, *Revue de l'Égypte ancienne,* t. II, 1930, pp. 210–253).

Though Dr. Keimer does not claim that his list is exhaustive he has collected thirty-six examples: our specimen, unknown to him, makes thirty-seven. He gives a list of the *motifs,* and in some cases, the number of their occurrences on separate figures; in other cases I have been able to obtain this from his illustrations and descriptions, aided by a few further details from Dr. Hall's

[1] Mr. Engelbach describes the Hippopotamus as "a rough limestone figure"; this is a mistake for which he has a noble excuse. The outbreak of the European war occurred at a very early stage in the preparation of this book, he was an early volunteer, and before he resumed work five years later, "all the articles had been dispersed to various Museums, thus rendering a final checking impracticable."

publication in *J.E.A.* XIII, p. 57 and pl. xxiii. Dr. Hall gives some details not mentioned by Keimer, but the latter includes his models in his list (with a reference to the wrong volume of the *J.E.A.*, here correctly stated as XIII).

From these sources I have particulars of twenty-six of the decorated animals, including the Harageh specimen, as follows,—

Flowers of *Nymphaea sp.* appear on all but one model, which appears to be entirely decorated with pondweed. This is at Cairo. The leaves, and buds too, almost invariably occur, the exceptions being the very small specimens.

Potamogeton lucens Linn. (Shining pondweed) appears on five specimens (Keimer, p. 226).

Cyperus papyrus Linn., contrary to one's expectations, appears thrice only, our specimen being one of the cases.

Rosettes of various kinds are very usual, but not invariably present.

Birds appear six times, including an example in Berlin described by Dr. Hall, possibly there is a seventh occurrence, on our example.

Butterflies appear thrice, and possibly four times.

A bee is seen on one specimen.

There is one instance of a frog, half of the body emerging from a lotus flower.

Decorated bands are found four times and a network once.

The attitudes of thirty-one decorated figures are known to me and of these nineteen are standing, seven are recumbent and five are sitting.

In my examination of the Harageh hippopotamus I have found Dr. Keimer's article of the greatest value. His qualifications as botanist and archaeologist have enabled him to clear up obscure points as to the representation of the so-called "lotus" in particular, and as his article is not very accessible I give now a résumé of his chief points.

The "lotus" of Egyptologists is a Nymphaea, i.e. a lily. The two known in ancient Egypt were *Nymphaea caerulea* Sav. and *Nymphaea lotus* Linn. The Red lotus, *Nelumbium speciosum* = *Nelumbium nucifera,* was not introduced, says Dr. Keimer, till the Persian conquest.

The distinguishing marks of *N. caerulea* are,—the flower is nearly triangular when seen in profile, the petals are sky-blue and lanceolate; the four sepals are nearly the same length as the petals and also lanceolate, but narrower, and have on the exterior a series of vertical flecks.

In Egyptian decoration the flower is drawn in profile to show only three of the four sepals,—the flecks appear sometimes on the petals also and the whole design keeps a triangular air. The bud also shows the flecks, and is narrow, conical, and very pointed (see our Fig. 4).

N. lotus has a flower which looks rounded in profile; the snow-white petals have a rounded tip; the four sepals are of an ovoid form with rounded tips; a very pronounced veining is seen on the sepals. The bud is long, ovoid, and rounded at the tip, and contrary to *N. caerulea* the sepals have strong veining.

These characteristics appear in the ancient representations.

The natural leaf of *N. lotus* has a serrated edge, but the Egyptian all but invariably represented both species with the same leaf, that of the smooth-edged *N. caerulea.*

In addition to the buds and leaf, Keimer considers it possible that the flower as viewed from above is represented in a conventionalised form by the

1
2
3
4

rosettes of various designs so commonly found on the animals. The opinion, as he mentions, had already been advanced by Goodyear and others.

As for the designs on the models, Dr. Keimer shows that they are not disposed, as one might hastily have concluded, in a purely haphazard manner, but follow certain rules of which the guiding principle is that each motif is placed on the part of the body best adapted to it.

On the head of the animal is drawn the triangular profile of *N. caerulea*, the stalk coming down towards the snout, the tips of the petals falling over the back of the head and the neck.

On the base of the back the rounder, broader form of *N. lotus* fills the wide space better and is employed in every case but one, an example at Cairo, Keimer's Fig. 9.

The buds are generally placed so that their stalks decorate the legs; where pondweed appears, that often occupies the position on the legs, for which its slenderness makes it suitable. Leaves or buds often cover the cheeks, the stalks toward the snout.

When the animal is in a standing position the design on the two sides is always identical (I notice, however, very occasional slight differences in detail, for instance, Keimer's Fig. 7 has a tiny bee on one side and a small bird on the other).

These are the chief points of Keimer's interesting article so far as it relates to the hippopotamus models.

Let us now study the Manchester figure in the light of these observations. For a general view the drawing in diagramatic form, Fig. 5, will be found most convenient, though many of the motifs appear clearly in the plate.

We shall find a Nymphaea bud and a papyrus respectively, on the fore-legs, the stalks on the slenderer part, while the hind legs each have a leaf arranged similarly; a very clear and bold flower of *N. caerulea* occupies the middle of one side, the flecks appearing contrary to nature, on some of the petals as well as on the sepals, as not uncommonly in the conventionalised representations (Fig. 4). By examining closely one finds that the flower on the opposite site has also the characteristic flecks, see Fig. 2. On the same Fig. 2, the flower of *N. lotus* can be seen to decorate the base of the back, for on one of the sepals the veining fortunately comes out in the photograph. This specimen therefore follows Keimer's rules.

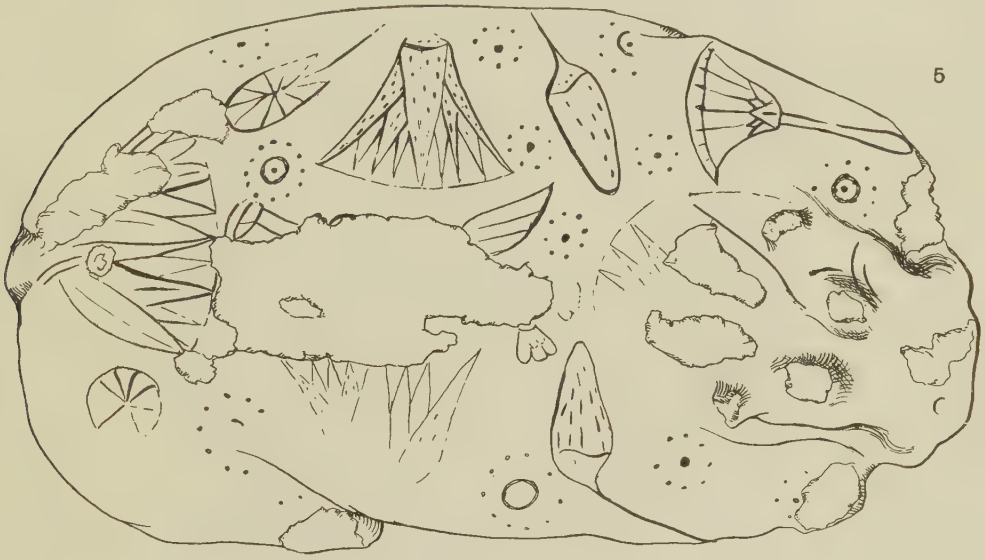
The top of the back (Fig. 5) is badly damaged. It evidently bore some of the less common designs, for instance, part of the wing of a bird or butterfly projects towards the head from the damaged portion, and below it are two objects which might be parts of the tail of the same bird, or possibly wings of another smaller butterfly.

Just above the lotus on the base of the back, between it and a rosette, can be faintly seen a tantalising fragment, which does not correspond to any part of any of the designs known to Keimer, and might therefore, if intact, have been of special interest. It appears only in the diagram, for none of the views were taken sufficiently overhead to display it.

The rosettes on this model are of two forms, only differing slightly. Keimer, who collects in his Fig. 48 the rosettes which he considers to be possibly derived from the flower of a Nymphaea, viewed from above, omits both these forms, though they occur on many of the finest specimens he publishes.

Apparently, therefore, he derives them from another source. It seems, nevertheless, that they may be a simplification of the flowers, showing only the anthers of the stamens, in fact the central part of the flower, without the surrounding petals. One can imagine the centre of the coloured illustration of *N. caerulea* shown in *Anc. Eg.* 1917, frontispiece, Fig. 1, being so conventionalised. However, as such a dot is sometimes placed to indicate the nostril of the beast, and is surrounded by a circle of dots to imitate the short hairs near the nostrils, the design may have been taken over originally from that usage.

With regard to the spacing out of the motifs, it may be noted that though in a recumbent figure the absolute symmetry of the two sides noted by Keimer for the standing beasts is not possible, yet the design has evidently been arranged to give as balanced an effect as may be (see diagram).



5

As to the period of the figure, it is doubtless of the Middle Kingdom, but can it be dated more closely?

The excavator gives the age of the glazed dog found with it, and therefore presumably of the tomb, as *Early* Twelfth Dynasty (Engelbach, *Harageh*, par. 50, pl. xiv, 8), although he places the greater part of the cemetery "within the limits of the reigns of Senusert II and Amenemhet III." One supposes he bases the early date on the presence in the tomb of a "salad mixer" or "corrugated" pot (*op. cit.*, tomb register, pl. lviii, 56). This style he places "before Senusert II." Apparently he has overlooked the fact that many examples were found at Kahun, a town only *founded* by Senusert II (Petrie, *Kahun*, pl. xiii).

Nevertheless the style of the hippopotamus does seem rather to accord with an early date, for several of the motifs are like those found on the three hippopotami from the tomb of an xith dynasty king at Dira Abu'l Naga,—the rosettes formed of dotted circles appear on one of these, two birds and the rare papyrus on another, while the third is like ours in being a recumbent figure. Though taken separately none of these points carries much weight, yet their cumulative effect is not without value.

Mr. G. D. Hornblower most kindly allows me to publish a head (Fig. 6) in his possession which he considers one of the few which is equal to the Harageh specimen in modelling. This was bought from a dealer. It was said to come from the same lot of tomb furniture as the blue glazed figure of a nude woman published by him in *J.E.A.* XV, pl. ix, 4 (also in his possession), and as the desert rats formerly in the collection of the Earl of Carnarvon, one of which is now in the British Museum. All these objects are in the style of the twelfth dynasty. It is in frit, with light blue-green glaze. There is no decoration. The plate shows its actual size.

The representation, on an animal figure, of objects with which it was supposed to be surrounded, was not, I think, till lately, known to occur before

the Middle Kingdom. It is now, however, carried back to the Middle Predynastic Period, for during his work at Badari Mr. Brunton found (in grave 3759) a fragment of a pottery hippopotamus with a design of a ship, and men with harpoons, evidently meant as surrounding the beast with intent to destroy it (*Bad. Civ.*, p. 54 and pls. liv, 15, and xlviii, 3). The fragment is that of the hindquarters and fortunately both sides of these remain. One can note, therefore, that on this primitive example the two sides are not identical, for on the right is the stern of a boat, with the sheltering branch for the helmsman, as seen constantly on the Predynastic vases, while on the left side are the harpooners. My impression is that if we had the remainder we should find a boat near the head on the *left* side of the beast, and harpooners on the *right*. The fragment shows a sense of balance and the two sides were probably alike, though reversed. Though the carrying out differs, it is surprising to find an idea,

so common in the Middle Kingdom, already in existence so far back in Predynastic times. Will intervening examples perhaps be discovered?

This article was practically finished when I noticed, on the photograph of the hippopotamus found at Harageh the same year as the Manchester example, and figured in *Harageh*, pl. xiv, 12, faint traces of decoration, which appeared to me to represent a water lily leaf. Through the kindness of the authorities of the Newbury Museum I have since been allowed to examine the specimen and though the traces are excessively faint, it appears to me that it probably did bear a floral pattern of the usual design. It is, in any case, a beautifully moulded specimen, though small ($2\frac{5}{8}$ long by $1\frac{1}{16}$ broad). The blue paste covering it is of a different order from the usual glaze, the blue colour remains, but the glossy appearance is missing and probably the outer surface has entirely perished, hence the disappearance of the pattern.

W. M. Crompton.

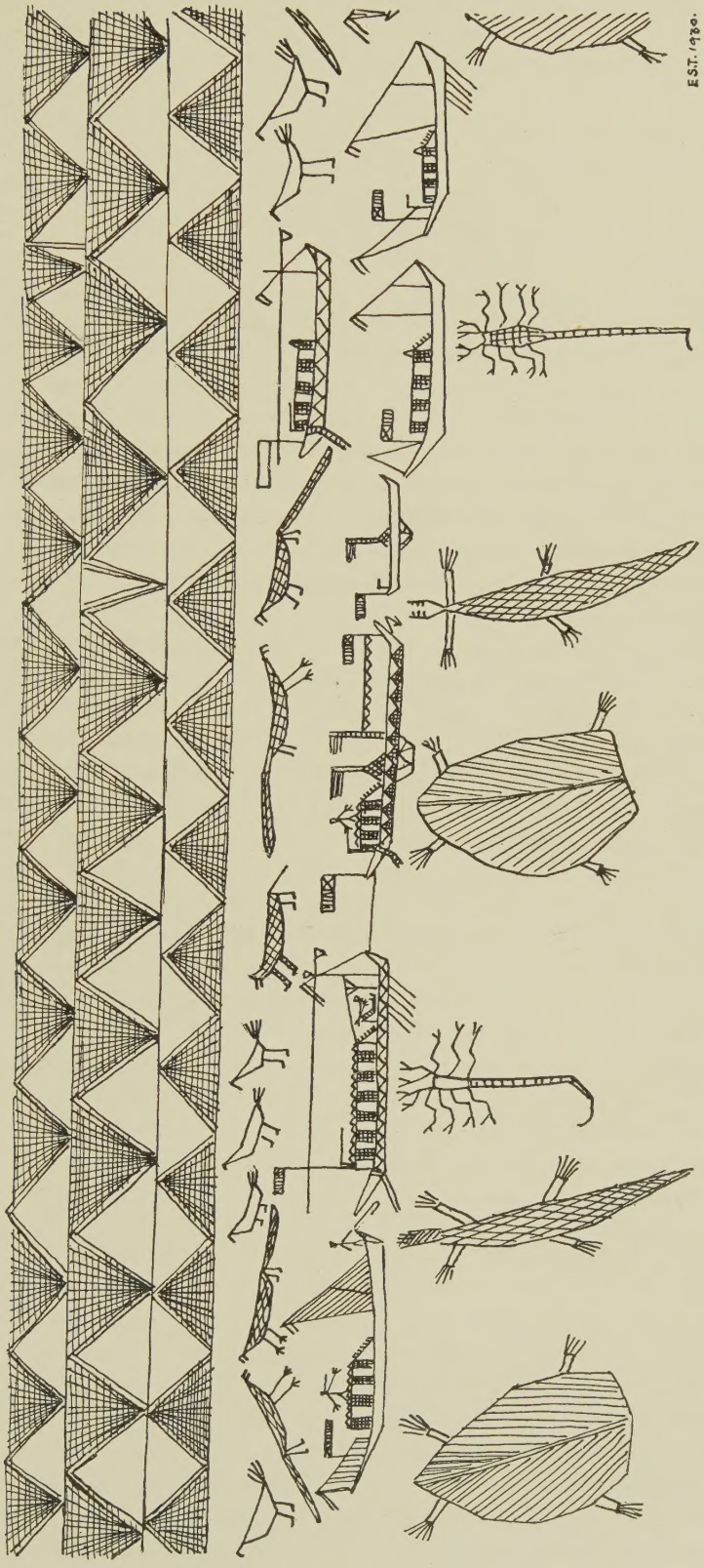
NOTE ON A DECORATED GOURD.

A GOURD from the Sudan with incised designs represented in the accompanying figure was presented to the Pitt Rivers Museum in 1881. In the upper registers are hatched triangles; beneath them are non-descript animals and a bird; next below are various boats and a Nile steamer towing a dahabiah. Beneath the boats are (presumably) a turtle, crocodile, and scorpion.

Except in the case of the scorpion, the artist has followed the ancient Egyptian scheme: land, water, and creatures under the water, in order downwards. The bands of hatched triangles recall the pattern on the decorated pots of protodynastic age, on which it has been suggested hills are represented. As on those pots, animals are represented above the boats, and aquatic creatures below them. But I can find no example on which all three occur together. A comparison of the boats is interesting, or rather, instructive. Knowing what a Nile-steamer and dahabiah are like we can recognize them and the detail, although (e.g.) the cabins are gabled and the engine enclosure triangular. The hulls are fancifully ornamented, the shapes of the boats' extremities and the size of the figures exaggerated. But the steamer has an extra flag on a very stout pole forward. A superfluous bank of oars may also be remarked on, (below) the dahabiah. Perhaps, and very probably, the Nile boats represented on the Decorated Pottery are not less unlike the originals than these are. Who without knowing would recognize the funnel and smoke, and the anchor (? on a boom) at the steamer's bow? On second thoughts, is the object in front of the funnel a flag after all, or another smoking stack, perhaps from the galley? It is impossible to suppose that the artist in 1881 was inspired in his design by the sight of an analogously decorated Ancient Egyptian red-painted pot.

I am enabled to produce this note by the kindness of Mr. Henry Balfour, Curator of the Pitt Rivers Museum.

E. S. THOMAS.


EST. 1780.

REVIEWS.

The Edwin Smith Surgical Papyrus. By J. H. Breasted. 4to. Vol. I, 596 pp., 8 pls., vol. II, xiii pp., 44 pls. 84*s.* 1930. (University of Chicago Press, Printed in Oxford.)

This work is a revelation of the beginnings of scientific diagnosis of injuries, which gives a rational basis of treatment on which later methods were built. It lets us see the growth of common sense observation and reasoning, like that of North Americans in a case recently described. There is no reliance or magic in the treatment, though on the back of the roll have been copied incantations and recipes of an entirely different nature.

This splendid papyrus, over fifteen feet long and thirteen inches high, is magnificently reproduced in the second volume, faced with a transcription into hieroglyphics. The writing is old and large, and according to the forms it is attributed to the late Hyksos age. It belongs, then, to that scientific growth, of exposition if not of research, witnessed by the mathematical Rhind papyrus.

The text consists of an original treatise, supplemented by glosses of later copyists in order to explain difficult terms. In our ignorance of the usages of technical terms, the comments of those to whom the older text was obscure, are of essential value.

The subject is the treatment of injuries, twelve instances in the flesh, thirty-three in the bones. Each case is divided into diagnosis, decision if it can be treated, and treatment with observations. The stages are fully discussed by Prof. Breasted, and the meaning of unknown or doubtful words is considered. A few instances of the text may be quoted.

"Instructions concerning a wound in his ear. If you examine a man having a wound in his ear, cutting through the flesh, the injury being in the lower part of the ear, and confined to the flesh. You should say about him 'one having a wound in his ear, cutting through the flesh. An ailment which I will treat.' If you find the stitching of that wound loose, and sticking in the two lips of his wound, you should make for him stiff rolls of linen, and pad the back of his ear therewith. You should treat it afterward with grease, honey, and lint every day till he recovers." This use of honey on a healing surface is very usual, though the action of it is obscure to us.

"Concerning a break in his collar-bone. If you examine a man having a break in his collar-bone, you should find his collar-bone short and separated from its fellow. You should say about him 'one having a break in his collar-bone, an ailment which I will treat.' You should place him flat on his back, with something folded between his two shoulder blades. You should spread out his two shoulders in order to stretch apart his collar-bone, until that break falls into his place. You should make for him two splints of linen; you should

apply one of them on the inside of his upper arm and the other on the outside of his upper arm. You should bind it with *amaru*, and treat it with honey every day till he recovers." *Amaru* was some mineral, not yet identified, perhaps an alkaline carbonate.

The greater part, or perhaps the whole, of these cases described were due to wounds in warfare; and, as illustrating such injuries, nine examples of wounds found on bodies of ancient soldiers are here illustrated.

The various symptoms of different kinds of spinal injury, shown by different paralyses, are carefully described. Some curious terms are used. "Moor a man at his mooring stakes" means keeping the patient quiet in habitual conditions. In very serious or hopeless cases of head injury "make for him two supports of brick, until you know he has reached a decisive point"; the patient was thus propped up with a built support to fit the body, so that the injured parts should not be shifted.

Such a technical work abounds in difficult words, sometimes quite unknown; but the repetition of such in a body of text like this gives the best road to interpretation. Not only is this book the greatest step in our knowledge of early surgery and treatment, but it will clear up many obscure terms, and be a valued text-book for students of hieratic.

The Prehistoric site of Okanomo, province of Chikuzen, by S. Shimada, and *Essay on Ancient Mirrors*, by S. Umehara. 8vo. 150 pp. + 27 English; 30 pls., 39 figures. (Kyoto Imperial University) 1930.

Again we must welcome an excellent volume of the researches of our friends, in the southern end of Japan. The burials were mostly in double urns, placed mouth to mouth. They belong to the earliest Bronze Age, from about 100 B.C. to 100 A.D. The spear heads are narrow and straight, with a polygonal mid-rib. The main study is that of the bronze mirror designs of this period, largely built up from broken examples. This is a welcome addition to the series of volumes on Japanese archaeology, which can be consulted at University College.

Earlier Historical Records of Ramses III. By the Epigraphic Survey. $18\frac{1}{2} \times 23\frac{1}{2}$ ins. 10 pp., 54 pls. (University of Chicago Press) 1930. 20 dollars.

This fine book marks a new departure in size and style. The plates are larger than in any work of the last half century, and produced with a lavish care for accuracy. There is however no attempt to keep a uniform scale for the plates, which vary from 4·8 to 11·7 *per cent.* of the original. Though so perfect in the technical and practical value of the copies, no mere sumptuousness or display is shown; and the cost is less per plate area than in any other issue. This is a noble standard to set for the future, and it is to be hoped that others will follow it as nearly as means permit.

The subject is the great historical scenes and texts at Medinet Habu. The general direction is by Prof. Nelson of Beyrut, since the beginning in 1924, aided by six epigraphers and artists, four architects, and a photographer. The actual workers somewhat changed, but these numbers were maintained during the last five years.

The Introduction describes the conditions and history of the work. The translations by Prof. Breasted will appear in a more compact volume, and the architecture will be described by Prof. Hölscher. Prof. Nelson gives a description

of the scenes of the plates, and discusses their relation and character. The stages of the copying are 1st, a photograph, and enlarged blue print; 2nd, drawing on the print; 3rd, outline in ink and bleaching out the blue; 4th, print off blue copies of the inked outlines; 5th, cut up sections of this print to be verified in detail on the original wall; 6th, from these make finally a corrected drawing; 7th, copy in any lost details from earlier copies.

The parts copied are the whole of the north outside (sea fight), and portions of the south, inside of first and second courts. Enlarged photographs of the surroundings and buildings, and special scenes, occupy 18 plates, and there are double that number of line drawings. The only possible improvement might be in a purely artistic copying of the faces, which sometimes hardly receive the expression in the mechanical drawing. One suggestion is made by Mr. Starkey that the strange *sa* sign is the cap of a quiver; compare the larger copy on pl. 25 with the cap closing the quivers on pl. 29.

NOTES AND NEWS.

The British School of Egyptian Archaeology continued work at Tell Ajjul near Gaza, both on a city and a cemetery. The houses just below the surface were in good condition, up to six or eight feet high, even some doorways being complete with walling above. The latest date in this top level was given by scarabs of Apepa I, 2200 B.C. Below the upper levels the walls continued down, and not much fresh planning had been done during the history of the place. The streets are long, and straight, not like modern Arab building, and the life of the Canaanites seems to have been as civilised as that the Egyptians. The cemetery is both of the Copper Age with domed chambers, and of the Bronze Age with loculi around large pit tombs. The whole region must be thoroughly searched, as it is the best early site known, for the large extent, important position, and unencumbered land.

The Exhibition at University College will be open July 6 to 25.

Here there will be on view pottery and implements of the Copper and Bronze Ages; also many Hyksos antiquities (Bronze Age)—scarabs, goldwork, toggle-pins, and the skeleton of the great horse, the earliest known.

The Rockefeller establishment at Megiddo is clearing a fresh part of the site, but work is not active until the publication of the past discoveries is out of hand.

At Samaria a combined expedition under Mr. Crowfoot is at work, but the cumber of late building hinders the search of the Omri city. The Herodian hippodrome in the valley below is being cleared, and the pottery of the early iron age is found beneath it.